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Tittle: POLYMERIC SCREWFOR BONY ATTACHMENT

Depositor: Garsa Assessoria e Participações S/C Ltda
(BR/SP)
Inventor: Gilberto Orivaldo Chierice
Solicitor: Vilage Ribeirao Marcas & Patentes S/C Ltda

Summary: "POLYMERIC SCREW FOR BONY ATTACHMENT", idealized in order to speed up the reconstitution and bone integration in surgeries of bone implant, avoiding rejection and adequately resistant to sprain, characterized for being constituted of one polymeric screw, produced from polymer of synthetic oil of mamona (ricinus comunis), biocompatible, osteoinductive and rigid, being able to elaborate in various diameters and lengths, according with the necessity and location which will be used, with the body of external fastening thread, having or not having use of the head, and with a hole of triangular shape and passing in all extension of central axle, for fitting its own triangular key, that by means of the applied torque of the same, promotes therefore the attachment of the polymeric screw, which can also concomitantly be attached to a plate.

POLYMERIC SCREW FOR BONY ATTACHMENT

The present described report, deals with Patent application of utility design for "POLYMERIC SCREW FOR BONY ATTACHMENT", having as objective, new characteristic presentation, exclusive and functional, developed to be employed as screw for bone attachment in orthopedic, trauma logic, neurological surgery, emphasized to be produced from polymer synthetic oil of mamona (ricinus comunis), biocompatible and osteoinductive of rigid constitution, without showing the presence of the phenomenon rejection, attending the requirements of the utility and satisfying the technical conditions referent to the strength, security, practicality, quality of performance, in way of characterizing it as a design of low cost for its industrial feasibility, capable of attending the requirements and real necessities of the market consumer.

Currently are known some types of screws for bone attachment, which are made of metallic material, for use in medicine, being those called "allen" screws (the cylinder head is endowed with a hexagonal puncture).

These screw designs conventionally used, allows the fitting of the tool and the metal resists to the spraying effort promoted by the same, inclusive avoiding that the hexagonal hole be of big depth in the head of the screw, thus granting still bigger resistance.

But as it is known, the metal in general besides being heavy material, it has the inconvenience of being a strange body in the organism, generating a for example **metalose**.

It was thinking of a cure for these inconvenient, that the inventor created and developed the present design of "POLYMERIC SCREW FOR BONY ATTACHMENT", as a result of various studies, looking to provide a technically correct and functional solution, of great good taste in its plastic configuration and of great performance, with the intention to offer trustworthiness and to provide improvements, promoting themselves and personalizing amongst its congeners, by the fact that it is a screw for bone attachment, which is produced from polymer synthetic oil of mamona, biocompatible, osteinductive and rigid, no presence of rejection by the organisms.

Another important characteristic, is that the design for being produced from polymer, material of poor resistance to sprain, led to the development of a new design, in way that it resists to the strength of the sprain used on its body, idealizing this way a hole of a

triangular shape, thus providing wider walls, being this its passing puncture in its central axle of the head up to the opposite extremity of the body, in way that the tool developed specially for this kind of perforation, penetrate in all extension of the screw, which thus transfer all the strength of the sprain applied for the tool itself, thus eliminating the risk of breaking, and even though it may happen, its removal becomes easier, therefore in any part of the screw, becoming feasible the fitting of the tool.

It is still left to mention that the fact of making use of the geometric figure for the perforation, it gives exactly, by the fact that it contains less numbers of sides and minor angles, making the torque applied by the tool be bigger and more secure than the torque applied in others geometric figures.

The fact of making use of the body of a thread, is given by the fact of allowing its immediate attachment at the time of placement, besides the fact that it obtains an area of bigger surface, guaranteeing a firm and secure attachment, and in this direction, the passing of triangular hole comes to contribute still more, therefore with time the tendency is that, with the regeneration of the bone, this comes to be filled, becoming an integrating part of same.

With this we have a highly efficient design, which is noticeable by its structural and function simplicity, offering the user, the efficient and additional option in the market of the congeners.

For a total visual of the construction of the present design, and to better elucidate the described report, follows in annex the drawings which make the following references:

Figure 1: Superior view of the polymeric screw;

Figure 2: Lateral view in longitude cut of the polymeric screw;

Figure 3: Perspective view of the polymeric screw.

Of conformity with the illustration and its details, the "POLYMERIC SCREW OF BONY ATTACHMENT" however considered, constitutes of a polymeric screw, produced by biocompatible polymer, osteoinductive and rigid, synthetic oil of mamona (ricinus comunis), that being able to elaborate in various diameters and lengths, according with the necessity and location which it will be used, with the body of external fastening thread, having or not having use of the head, and with a hole of triangular shape and passing

of triangular shape and passing all extension of central axle, therefore making use of its own triangular key, which by means of its fitting and conforming to the torque applied to the same, promoting the attachment of the polymeric screw (1), which can also concomitantly be attached to a plate, being that also polymeric, conforming its necessity.

According to what was written and illustrated, deals with a new conception in "POLYMERIC SCREW FOR BONY ATTACHMENT" which technical, mechanical, constructive and functional characteristics are completely different from these relevant technical state.

For its characteristics truly innovated and by its advantages which offers, filling all the requirements of newness and originality in the gender, the present "POLYMERIC SCREW FOR BONY ATTACHMENT", unites necessary conditions to deserve the privilege of the utility design.

CLAIM

1. "POLYMERIC SCREW FOR BONY ATTACHMENT", characterized to be constituted of polymeric screw(1), produced from polymer synthetic oil of mamona (ricinus comunis); biocompatible, osteoinductive and rigid, being able to elaborate in various diameters and lengths, according with the necessity and location which it will be used, with a body (2) of external fastening thread, making or not making use of the head(3), and with a hole(4) of triangular shape and passing in all extension of central axle, for the use of its own tool which promotes its attachment.

CONCLUSION

"POLYMERIC SCREW FOR BONY ATTACHMENT", idealized in order to speed up the reconstitution and bone formation, in surgeries of bone implant, avoiding a rejection, and adequately resistant to sprain, characterized for being constituted of one polymeric screw (1), produced from polymer of synthetic oil of mamona (ricinus comunis), biocompatible, osteoinductive and rigid, being able to be elaborated in various diameters and lengths, according with the necessity and location which will be used, with the body (2) of external thread fastening, making or not making use of the head (3), and one with one hole (4) of triangle shape and passing in all extension of central axle, for its own triangle key fitting, that by means of the applied torque of the same, promotes therefore the attachment of the polymeric screw (1), which can also concomitantly be attached to a plate.